

**Response to Alameda County Health Care Services Agency Comments**  
**Claim No. 14095**  
**October 28, 2013**

The Conceptual Site Model (CSM) does not adequately assess the lateral extent of the groundwater plume. The offsite extent of the plume remains undefined beneath Foothill Boulevard as the utility trench along Foothill Boulevard has been identified as a preferential pathway for offsite contaminant migration. The most downgradient groundwater sample collected in 2009 preferential pathway investigation identified a concentration of 81,000 µg/L TPHg 120 feet south of the property line. Therefore, the leading edge of the plume has not been adequately defined and the contaminant plume cannot be considered stable or decreasing.

The Site is in an older community consisting of mixed use commercial and residential properties and is in an area identified to contain domestic and commercial water supply wells. Attachment 1 presents documents that demonstrate well locations in 1910. A table comparison of current East Bay Municipal Utilities District (EBMUD) and Alameda County Flood Control and Water Conservation District (ACFCWCD) databases of existing wells indicates the EBMUD database contains more comprehensive well location data. However, the EBMUD database was not reviewed or the sensitive receptor survey. The EBMUD database consists of addresses where backflow prevention devices have been installed for residential and commercial properties which have volunteered that they have wells. The ACFCWCD database contains records of permitted wells drilled after July 17, 1973 and wells documented by the California Department of Water Resources (DWR) for groundwater investigation in Alameda County in the 1960's. The EBMUD backflow prevention device database contains many more well locations (400 versus 32) for the City of Oakland. The position of the County is potential well presence in the site vicinity presents a unique site attribute or site-specific condition that demonstrably increase the risk associated with residual petroleum constituents. The County contends that, without having the contaminant plume defined, the risk to sensitive receptors cannot be determined.

RESPONSE: The only contaminant of concern above water quality objectives (WQOs) remaining at the Foothill Mini Mart Site is MTBE at very low concentrations in two onsite monitoring wells. Monitoring well MW-1 currently has a concentration of MTBE of 11 µg/L and MW-2 currently has a concentration of 5.9 µg/L. The plume is defined by downgradient monitoring well MW-7 located across Foothill Boulevard. See the table, graph and figure below.

The referenced concentration of 81,000 µg/L TPHg is associated with a grab groundwater sample USB-11 collected in a utility trench approximately 120 feet crossgradient east of a separate, parallel plume emanating from an adjacent property located east of the Foothill Mini Mart Site. The Fund does not believe the sample in question is associated with the Site. The Regional Water Board does not have a numeric value WQO for TPHg.

**Most Recent Concentrations of Petroleum Constituents in Groundwater**

Sample	Sample Date	GRO (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-Benzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	TBA (µg/L)
<b>Foothill Mini Mart Wells</b>								
MW-1	01/02/2013	<50	<0.5	<0.5	<0.5	0.58	<b>11</b>	<10
MW-2	01/02/2013	150	<0.5	<0.5	<0.5	<0.5	<b>5.9</b>	950
MW-3	01/02/2013	<100	<0.5	<0.5	<0.5	0.52	3.0	440
MW-7	01/02/2013	<50	<0.5	<0.5	<0.5	1.2	<b>5.0</b>	<10
MW-10	01/02/2013	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<10
MW-11	01/02/2013	<50	<0.5	<0.5	<0.5	<0.5	1.6	<10
<b>Parallel Plume Site Wells</b>								
MW-4*	01/02/2013	1,200	<0.5	0.51	1.5	3.0	2	<b>1,200</b>
MW-5*	01/02/2013	<200	<1.0	<1.0	<1.0	1.3	3.0	<b>3,900</b>
MW-5B*	01/02/2013	<50	<0.5	<0.5	<0.5	1.4	<b>22</b>	<10
MW-6*	01/02/2013	3,500	<b>61</b>	<2.5	29	32.6	<b>360</b>	<b>1,300</b>
MW-6B*	01/02/2013	<50	<0.5	<0.5	<0.5	0.65	<0.5	<10
MW-12A*	01/02/2013	72	<0.5	<0.5	<0.5	0.69	<b>140</b>	<10
MW-12B*	01/02/2013	<50	<0.5	<0.5	<0.5	1.2	<b>5.0</b>	<10
MW-13A*	01/02/2013	970	<1.0	<1.0	<1.0	0.89	3.7	26
<b>WQOs</b>	--	--	<b>1</b>	<b>150</b>	<b>300</b>	<b>1,750</b>	<b>5<sup>a</sup></b>	<b>1,200<sup>b</sup></b>

NA: Not Analyzed, Not Applicable or Data Not Available

µg/L: Micrograms per liter, parts per billion

<: Not detected at or above stated reporting limit

TPHg: Total petroleum hydrocarbons as gasoline

TPHd: Total petroleum hydrocarbons as diesel

MTBE: Methyl tert-butyl ether

TBA: Tert-butyl alcohol

WQOs: Water Quality Objectives, San Francisco Regional Water Quality Control Board (Region Water Board) Basin Plan.

--: Regional Water Board Basin Plan does not have a numeric water quality objective for TPHg

\*: Wells related to the up/side gradient parallel plume from adjacent property.

<sup>a</sup>: Secondary maximum contaminant level (MCL)

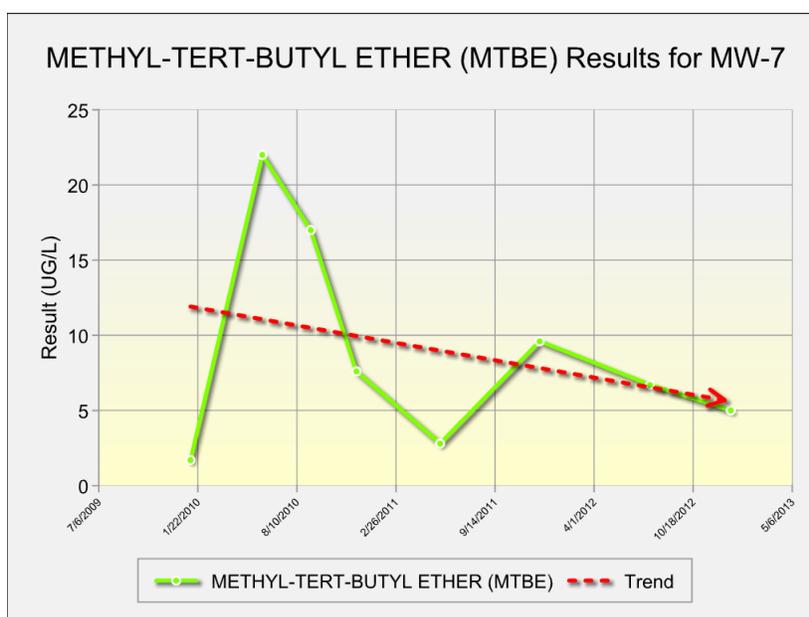
<sup>b</sup>: California Department of Public Health, Response Level

The downgradient extent of groundwater contamination has not been determined as discussed previously above; specifically the Foothill Boulevard EBMUD 8-inch-diameter water pipeline has been identified as a preferential pathway. It has not been determined if the contaminant plume presents a nuisance condition.

**RESPONSE:** The remaining petroleum constituents at the Foothill Mini Mart Site are limited to two onsite monitoring wells at an active commercial petroleum fueling facility. Therefore, a nuisance as defined by Water Code section 13050 does not exist. The separate, parallel plume emanating from an adjacent property located east of the Foothill Mini Mart Site may present a nuisance condition.

The downgradient extent of groundwater has not been determined. The USTCF states that the Groundwater specific Criteria is met by Class 2 which requires a finding that the plume has been delineated to less than 250 feet in length, has no free product, the nearest existing water supply well or surface water body is greater than 1,000 feet from the defined plume boundary, and benzene and MTBE concentrations are less than 3,000 and 1,000  $\mu\text{g/L}$  respectively.

**RESPONSE:** The MTBE plume is measured to be 180 feet long and is defined by MW-7 with a concentration of 5  $\mu\text{g/L}$ ; no free product is present; no supply wells or surface water bodies were identified in the files reviewed; there are no detectable benzene concentrations are reported in any monitoring wells associated with the Foothill Mini Mart Site and the highest concentration of MTBE is 11  $\mu\text{g/L}$  in onsite MW-1. The plume is stable and decreasing as demonstrated in the graph below.



However, as discussed above the plume emanating from the property next door is undefined.

Very limited soil samples have been collected within the top 5 feet at the Site and no analysis for naphthalene has been performed. It is therefore unclear that the soil concentrations meet the concentrations listed in Table 1.

**RESPONSE:** Adequate samples have been collected to be representative of the 100 foot by 120 foot property. The relative concentration of naphthalene in soil can be conservatively estimated using the published relative concentrations of naphthalene and benzene in gasoline. Taken from Potter and Simmons (1998), gasoline mixtures contain approximately 2 percent benzene and 0.25 percent naphthalene. Therefore, benzene can be directly substituted for naphthalene concentrations with a safety factor of eight.